

What is claimed is:

1. An exhaust emission control device of an internal combustion engine including a diesel particulate filter disposed in an exhaust passage of the internal combustion engine for trapping particulates in exhaust, and a pressure sensor for detecting a differential pressure across the diesel particulate filter to determine the timing for oxidizing the particulates accumulated in the diesel particulate filter based on the differential pressure, which increases with the accumulation of the particulates, the device comprising:

means for estimating a temperature of the pressure sensor;

means for setting a correction factor and performing a correction information acquiring process for reading output from the pressure sensor and an estimated temperature by the temperature estimating means when the engine is not running, determining offset correction factors for removing offset errors of the pressure sensor, the offset errors being the difference between the read-out output from the pressure sensor and an output from the pressure sensor at the time when the pressure is zero, which should be constant irrespective of temperature changes, and storing relationships between the offset correction factors and temperatures of the pressure sensor in a memory; and

means for reading the output from the pressure sensor and the estimated temperature by the temperature estimating means when the engine is running for measuring a differential pressure across the diesel particulate filter, and selecting one of the offset correction factors in the memory which corresponds to the estimated temperature,

so as to correct the output of the pressure sensor with the selected offset correction factor.

2. The exhaust emission control device of an internal combustion engine according to claim 1, wherein

the correction factor setting means is designed such that estimated temperatures of the pressure sensor are divided into a plurality of temperature ranges, and the memory stores each offset correction factors to match with each temperature range.

3. The exhaust emission control device of an internal combustion engine according to claim 2, wherein

the correction factor setting means is designed so that whenever a new offset correction factor is obtained for a given temperature range by the correction information acquiring process the new offset correction factor replaces an old offset correction factor.

4. The exhaust emission control device of an internal combustion engine according to claim 3, wherein

the correction factor setting means is designed so that when an offset correction factor that corresponds to a first temperature range is obtained by the correction information acquiring process, if another correction factor that corresponds to a second temperature range nearest to the first temperature range has already been obtained by the previously completed correction information acquiring process and if there is one or more temperature ranges between the first

and second temperature ranges, then the offset correction factor of the temperature range sandwiched between the first and second temperature ranges is calculated by interpolation between the offset correction factors of the first and second temperature ranges.

5. The exhaust emission control device of an internal combustion engine according to claim 1, wherein

the memory stores relationships between gain correction factors and temperatures of the pressure sensor for removing gain errors resulting from gain variations of the pressure sensor, and

the correction means selects a gain correction factor in the memory which corresponds to the estimated temperature by the temperature estimating means, so as to correct output of the pressure sensor with the selected gain correction factor.

6. An exhaust emission control device of an internal combustion engine including a diesel particulate filter disposed in an exhaust passage of the internal combustion engine for trapping particulates in exhaust, and a pressure sensor for detecting a differential pressure across the diesel particulate filter to determine timing for oxidizing the particulates accumulated in the filter based on the differential pressure which increases with accumulation of the particulates, the device comprising:

means for estimating a temperature of the pressure sensor;

memory for storing relationships between gain correction factors and temperatures of the pressure sensor for removing gain errors resulting from gain variations of the pressure sensor; and

means for correction that selects one of the gain correction factors in the memory which corresponds to the estimated temperature, to correct the output of the pressure sensor with the selected gain correction factor.

7. The exhaust emission control device of an internal combustion engine according to claim 1, wherein
the pressure sensor is a semiconductor pressure sensor.